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species should be met with in this neighborhood, or even in the country, is not extraordinary, since these shrubs are propagated from cuttings or slips. The published figures of *F. viridissima* are of the long-stamened sort. Siebold and Zuccarini describe the long-styled form of *F. suspensa*, the counterpart of the one we have, but their plate represents both; so that the fact of dimorphism is pretty well made out.—A. GRAY.

## ZOOLOGY.

THE DIMINUTION OF FOOD FISHES.—In our recent abstract of the annual report of the Commissioners of Fisheries of this State, reference was made to a letter addressed to the Commissioners by Prof. Baird of the Smithsonian Institution and United States Commissioner of Fish and Fisheries, in answer to one sent by them asking his opinion as to the probable cause of the rapid diminution of the supply of good fishes on the coast of New England, and especially of Maine. The letter is of such an interesting character that we subjoin it nearly entire:—

“We are all very well aware,” writes Prof. Baird, “that fifty or more years ago, the streams and rivers of New England, emptying into the ocean, were crowded and almost blockaded, at certain seasons, by the numbers of shad, salmon and alewives seeking to ascend for the purpose of depositing their spawn, and that, even after these parent fish had returned to the ocean, their progeny swarmed to an almost inconceivable extent in the same localities, and later in the year descended to the sea in immense schools. It was during this period that the deep-sea fisheries of the coast were also of great extent and value. Cod, haddock, halibut, and the line fish generally, occupied the fishing grounds close to the shore, and could be caught from small open boats, ample fares being readily taken within a short distance of the fishermen’s abode, without the necessity of resorting to distant seas. Now, however, the state of things is entirely different. The erection of impassable dams upon the waters of the New England States, and especially of the State of Maine, has prevented the upward course of the anadromous fishes referred to, and their numbers have dwindled away, until at present they are almost unknown in many otherwise most favorable localities.

The fact, too, has been observed, that with the decrease of these fish there has been a corresponding diminution in the numbers of the cod and other deep-sea species near our coasts; but it was not until quite recently that the relationships between the two series

of phenomena were appreciated as those of cause and effect. Halibut, it is believed, can be reduced in abundance by over-fishing with the hook and line, but the experiences in Europe and America coincide in the confirmation of the opinion that none of the methods now in vogue for the capture of fish of the cod family (including the cod, haddock, pollock, hake, ling, etc.) can seriously affect their numbers. Fish, the females of which deposit from one to two million of eggs every year, are not easily exterminated unless they are interfered with during the spawning season, and as this takes place in the winter and in the open sea (the spawn floating near the surface of the water), there is no possibility of any human interference with the process. Still, however, these fish have become comparatively very scarce on our coast, so that our people are forced to resort to far distant regions to obtain the supply which formerly could be secured almost within sight of their homes.

It is now a well established fact that the movements of the fishes of the cod family are determined; first, by the search after suitable places for the deposit of their eggs; second, by their quest of food. Thus the cod, as a summer fish, is comparatively little known on the coasts of northern Europe; but as winter approaches the schools begin to make their appearance on the northwestern coast of Norway, especially around the Loffoden islands, arriving there finally in so great numbers that the fishermen are said to determine their presence by feeling the sounding lead strike on the backs of the fish!

Here they spend several months in the process of reproduction, the eggs being deposited in January and the fishery being prosecuted at the same time. Twenty-five to thirty thousand men are employed in this business for several months, at the end of which the fish disappear and the fishermen return to their alternate occupations as farmers and mechanics. The fish are supposed to move off in a body to the Grand Banks, which they reach in early summer, and where they fatten up and feed until it is time for them to return again to the northeast. It is believed that the great attraction to the cod on the Banks consists in part of the immense schools of herring or other wandering fish, that come in from the region of the Labrador and Newfoundland seas, and which they frequently follow close in to the shore, so that they are easily captured.

It is well known that the presence or absence of herring determines the abundance of hake and cod on the Grand Manan Fishing Banks, the fishes of the first mentioned family having a peculiar attraction to carnivorous fish of all kinds. It is, however, the anadromous fishes of the coast which bring the cod and other fishes of that family close in upon our shores. The sea herring is but little known outside of the region of the Bay of Fundy, excepting in September and October, and when they visit the entire

coast from Grand Manan to Scituate, for the purpose of depositing their spawn; this act depending upon their finding water sufficiently cold for their purposes, a condition which of course occurs later and later in the season, in going south. A portion of the school indeed passes around Cape Cod as far as Long Island, and I have received them fresh in November, filled with ripe spawn as taken from Vineyard Sound.

In the early spring the alewives formerly made their appearance on the coast, crowding along our shores and ascended our rivers in order to deposit their spawn, being followed later in the season by the shad and salmon. Returning when their eggs were laid, these fish spent the summer along the coast; and in the course of a few months were joined by their young, which formed immense schools in every direction, extending outward in some instances for many miles. It was in pursuit of these and other summer fish that the cod, and other species referred to, came close to the shores; but with the decrease of the former in number, the attraction became less and less, and the deep-sea fishes have now, we may say, almost disappeared along the coast.

It is, therefore, perfectly safe to assume that the improvement of the line fishing along the coast of Maine is closely connected with the increase in number of alewives, shad and salmon: and that, whatever measures are taken to facilitate the restoration of these last mentioned fish to their pristine abundance, will act in an equal ratio upon the first mentioned interest. The most important of the steps in question are the proper protection of these spring fish, and the giving to them every facility needed for passing up the streams to their original spawning grounds; this is to be done, of course, by the construction of suitable fishways and ladders. The real question at issue in regard to the construction of these fishways is, therefore, after all, not whether salmon shall become more plentiful, so that the sportsmen can capture them with the fly, or the man of means be able to procure a coveted delicacy in large quantities and at moderate expense. This is simply an incident; the more important consideration is, really, whether the alewife and shad shall be made as abundant as before, and whether the cod or other equally desirable sea-fish shall be brought back to our coast, so that any one who may be so inclined, can readily capture several hundred weight in a day.

The value of the alewife is not fully appreciated in our country. It is in many respects superior to the sea herring as an article of food; is, if anything, more valuable for export, and can be captured with vastly less trouble, and under circumstances and at a season much more convenient for most persons engaged in the fisheries.—*Boston Daily Journal*.

THE YOUNG ANIMAL AND PROTECTION. — IN the NATURALIST for August last, Mr. Deering advances the well known fact that

the young rattlesnake is not provided with so large, or so loud a rattle as the full grown snake, as tending to disprove the mimetic and protective uses of this appendage—"The young requiring greater facilities for obtaining food, and more extensive measures for protection."

Were this accepted as satisfactory reasoning, a similar conclusion might be reached in regard to a multitude of animals, for instance, all those having horns, as the deer, goat, antelope, etc., in which the young are unarmed: yet the protective uses of the horns cannot be questioned. With many of those animals, the female is invariably destitute of these appendages, yet we might suppose, from her position as the immediate protector of her offspring, that she required to be most fully provided in this respect.

The truth is that, to a remarkable extent, the young of most creatures are little else than the food of other animals; often they are the food of even their own species, if not of their own parents. Nothing is more emphatically proclaimed, on every side, than the fact (put into such divine language by Tennyson) that Nature is careless of the individual, however careful she may be of the type. She forms a thousand seeds, but only one germinates and produces its kind. We have, too, the mystery of the pollen, which I have watched for years with wonder, where, in one case, with apparently miserly penuriousness, she doles out the precious life-giving atom just sufficient to fecundate, while, in other instances, as if glorying in her prodigality, she scatters the golden dust as freely as some spendthrift heir squanders the hoarded wealth of his ancestors.

Yet I have perfect faith that "nothing is lost"—nothing wasted; but that all has a governing purpose, circumscribing to the very nicest minutiae the exact proportion requisite for the result; albeit hidden from our purblind eyes. We know so many of Nature's delicate adjustments and wonderful combinations that, surely, we can have perfect confidence that, even when all is dark to us, her ways are Wisdom's ways. We bring out our clumsy balances, but the volatile aroma escapes us and will not be weighed.

As to the frequency of the young animal not being provided with the protective weapons or appliances of the full grown one, abundant material can be found, from the oyster and lobster, the young

of which are notoriously exposed to destruction, to the noble stag attired with his "branchy crown," rejoicing naturally in his so thoroughly personified gender, guarding the herd of which he is the monarch, or the slow, sullen buffalo, where we see the males forming an impassable cordon around the mother cows and their helpless calves, when assailed by the "cruel archers," the bulls bearing behind their horns the calves when wounded, to a place of safety.

Why the young are unprovided with horns, or even the power to use them, is part of the great plan; and doubtless, may well be considered as tending to prove that at the first, the animal was not so protected, but slowly acquired these weapons through development. The early condition of the horns of the deer covered with smooth velvet, and unsuitable for defence, is another point favoring this view, which is strongly supported by a large amount of corroborative testimony in other animals.

Numberless facts offer themselves on this subject—the protection of the young, and its kindred subject—the precautions adopted to ensure fertilization. The suddenly acquired fierceness of the parent when guarding its offspring is a remarkable episode in the lives of many of the lower animals. This passion, frequently carried to the extreme of rendering them temporarily regardless of personal danger when even their lives are threatened, can only be recognized with wondering admiration;—too often, indeed, it puts our boasted human nature to the blush. This, after all, must be considered as the chief means of protection for the young animal. Though, it cannot be denied, instances are far from infrequent where the parent has the proclivity to devour its offspring.

Among insects the parental instinct is often wonderful, prompting them, not only to defend their young when attacked, but leading them, even in those cases where the parent's life expires previous to the full development of the progeny, to provide for its future, surrounding it with a network of protections, and circumstances adapted to its well-being. — HENRY GILLMAN.

THE WHITE-FRONTED OWL IN CANADA.—Although the "white-fronted owl" (*Nyctale albifrons* Cass.) is now conceded by most if not all American ornithologists to be the young of the saw-whet (*Nyctale Acadica* Bon.), its supposed rarity in comparison with the

adult renders the following record of recent instances of its capture in Canada of considerable interest. Mr. Ridgway, in a paper published in this journal in May, 1872, in noticing Mr. D. G. Elliott's mistake of considering the *N. albifrons* to be the young of *N. Tengmalmi*, has carefully elaborated the evidence of its being the young of *N. Acadica*. This relationship had been previously suspected, and seems now to be fully confirmed. Mr. McIlwraith, under date of Hamilton, Ontario, Canada, Jan. 20, 1873, writes as follows: "On looking over the NATURALIST of April, 1871, I observe a notice of the capture of a specimen of the white-fronted owl in Maine, and the writer of the note, Prof. A. E. Verrill, says that the only other instance of its occurrence in the United States of which he is aware, is the specimen taken by Dr. Hoy at Racine. I am a little surprised at this, for, though not coming much in contact with collectors, I have seen or heard of this species now and then for a number of years back. My first knowledge of it was from Cassin's account, and the figure given of it, in his Birds of America. Shortly afterwards I recognized it in a small case in the possession of the Rev. Professor Ingles, now of the Dutch Reformed Church, Brooklyn, New York, where it was labelled "Saw-whet-Young." The case was brought from Montreal. I next met with it in Toronto, where Mr. Passmore, taxidermist, had two specimens, one of which I obtained and have now in my collection. Again I heard from Mr. P. H. Gibbs, of Guelph, that there were several about his evergreens near the house, one of which he shot. About the same time Mr. Booth, a naturalist of Drummondville, told me of a specimen he had obtained. Dr. Anderson, of Point Levi, opposite Quebec, had his alive for a time, and I heard of still another in the hands of R. K. Winslow, Esq., of Cleveland, Ohio. From the foregoing it would seem to be more common in Canada than it is farther south. The opinion seems to be generally held by those parties with whom I have conversed on the subject that it is the young of the saw-whet, and yet it is somewhat singular that it is not as often met with as its supposed parents. In the month of October, a few years since, I had six in the saw-whet form brought me by a lad who got them all near the same place on his father's farm; yet not one of the other was met with. The theory recently advanced by Mr. Elliott in the "Ibis," of its being the young of the sparrow owl [*Nyctale Tengmalmi*] I do not think at all probable; I have the two side by side

and cannot observe any resemblance to warrant such a conclusion, the difference in size alone being sufficient to show the distinction. My own opinion is that it will be found to be the young of the saw-whet; but is it not possible that they do not all assume the same garb — that there may here be a freak of nature, so to speak, such as there is in the case of the screech owl, where we find both red and gray.” — J. A. A.

VARIATION IN THE TARSAL ENVELOPE OF THE BALD EAGLE. — Having observed in Baird's work and elsewhere remarks upon Audubon's plate of the “Washington Eagle,” as well as upon his statement, “scutellation on tarsus and toes uniform for their whole length,” I have thought that the results of my observations on Nova Scotian eagles may be considered pertinent. I soon found scutellation valueless as a specific character; differing in details in almost every specimen, and often unlike on the two legs of the same specimen. In a series of thirty or forty specimens, I found in some the tarsus crossed in front by five or six large scales; in others the scales successively decreased in size by one-fourth, one-third, and one-half; and in the others again become almost obsolete. The tarsal scutella differ from those of the toes in being immovable in their mutual relations, the phalangeal ones sliding under each other when the toes are extended. There are eleven to thirteen on the middle toe, about eight on the outer, and five on the inner and head toe respectively; they appear to vary less than the tarsal ones do. Now about the figure of “*Haliaeetus Washingtonii*.” The bird is drawn standing on a flat rock, which throws the toes forward, causing the tarsal and phalangeal scutellation to appear continuous; at least they would so appear, from the point of view presented, unless an engraver were particularly careful. Any bald eagle with well developed tarsal scales would show about the same thing under the same circumstances. Audubon's text is not so easily explained; but as he must have known that it was impossible for the stationary scales of either tarsus or toes to slip so as to meet each other, we may conclude that he meant “scales continuous the whole length of each.” But the question of the validity of “*H. Washingtonii*” does not rest entirely upon the accuracy or the reverse, of delineation and description. It is only for a few years that four positive species — *pelagica*, *albicilla*, *leucocephalus* and *Canadensis* have been discriminated



among the mass of "sea," "bald," "golden," "gray," "ring-tailed," etc., eagles stated to inhabit this country. All the gray or brown eagles from Nova Scotia that have passed through my hands are young bald eagles. One measured nearly eight feet across; another  $8\frac{1}{2}$  feet; exceeding some balds by over a foot. One had the tail  $15\frac{1}{2}$  inches; in another the curve of the bill was  $3\frac{1}{2}$  inches, and tarsus the same. These measurements rival and even outdo "Washingtonianus" except in extent of wing.—J. BERNARD GILPIN, M. D., *Halifax, N. S.*

[NOTE. Dr. Coues, to whom we referred this paper, says:—"Dr. Gilpin's remarks upon the variation of the scales are interesting, and may be new to many; while I for one am satisfied with his explanation of Audubon's figure and statement. I wonder how many more times the "Washington Eagle" must be put down before it will stay down! As a species, it is a myth; as a specimen, it was a big, youngish bald eagle—the two-year-olds of which, before getting the white head and tail, are *usually* larger than the mature birds. Of the five eagles given by late authority, the Washington goes under, as just said; *pelagica* is a N. E. Asiatic species, not yet authentically of this country; *albicilla* Greenland and N. European species, *ditto*; leaving *Haliaetus leucocephalus*, the bald eagles, always known by naked tarsi; and *Aquila chrysaetos* (Canadianis), the gold eagle, with entirely feathered legs, as our only valid authentic species." See Key N. A. Birds, p. 219, 220. —EDS.]

THE COLORADO POTATO BEETLE VARYING ITS FOOD. — A generally received opinion in regard to the Colorado Potato Beetle, *Doryphora 10-lineata* (Say), is that its food is confined to plants of the family Solanaceæ. I have found it this season (June 19, 1872) at Port Austin, Michigan, sparingly feeding on grass, on which it had also deposited its eggs. Later in the season (July 20), at Fort Gratiot, Michigan, I encountered it in large numbers, in both the larva and perfect states, in the vicinity of potato-fields (where it had committed terrible depredations), devouring the younger leaves and flower buds of the common thistle (*Cirsium lanceolatum* Scop.), which it was rapidly stripping even to its thick stem so that the entire top of the plant hung down, almost severed. In the same neighborhood I also saw it on pigweed (*Amarantus retroflexus* L.), hedge mustard (*Sisymbrium officinale* Scop.), the cultivated oat, smart-weed (*Polygonum hydropiper* L.), and the red currant and tomato of the gardens, as well as the common nightshade (*Solanum nigrum* L.), the last two its more legitimate food. But of the last mentioned plants, with the exception of the nightshade, it ate only the young leaves, and of them very sparingly. The thistle it seemed particularly to relish. Could its attention be diverted from the potato to the Canada thistle it would encounter an object worthy of its prowess; and the curses which have

been heaped on its striped back would be turned to blessings. But, I fear, little good can be hoped from the capacity, thus evinced, to diversify its food, and so accommodate itself to circumstances. This can only be regarded as another obstacle in the way of its extermination.

Since writing the above I have found the beetle feeding on the maple-leaved goosefoot (*Chenopodium hybridum* L.), lamb's quarters (*C. album* L.) and thoroughwort (*Eupatorium perfoliatum* L.); and August 8, 1872, I saw it in the larva and perfect states, voraciously eating the black henbane (*Hyosciamus niger* L.), on which was also to be seen an abundance of the eggs.—HENRY GILLMAN, *Detroit, Michigan, September, 1872.*

THE SENSES OF SIGHT AND HEARING OF THE WILD TURKEY AND THE COMMON DEER. — At the foot of the bluff on the Vermilion River, I saw a flock of wild turkeys crossing on the ice and coming directly towards me. I concealed myself in a very dense thicket and awaited their approach. Though concealed by the thick brush I knew by the sound, that they were passing very near me, and going towards an open space on the brow of the bluff within easy shot. I rested my gun against a small tree, my head and arms only exposed, intently looking for the appearance of the game. The first that appeared was the head and neck of the leader of the flock, which he seemed to raise above the cover for the express purpose of looking at me, for he instantly stared directly toward me and gave the loud quick note of alarm. In a second or two he, with the rest, took wing, but, as if still in doubt, he flew near enough over me for a better observation. Evidently they did not smell me when they passed. The leader's attention was not attracted by the least motion. Before I had taken down my gun I heard the brush crack, and in an instant a large buck stopped so near me that I could see his form distinctly, but the brush was too thick to justify a shot. He stared at me for some seconds and then, seeming to become reassured, bounded on, when he soon passed through an open space and I shot him.

His attention had evidently been directed towards me by the sense of smell, but seeing no motion his fears became allayed.

The vision of the wild turkey is very acute but the sense of smell is very dull. Exactly the reverse is the case with the deer. — J. D. CATON.

THE ANT-LION.—While in the Indian Ladder Region, Albany Co., N. Y., in August, 1871, I found a large colony of ant-lions. It is situated near the head of the "Ladder Road," at the base of the cliffs and extends for several rods along the path to the "Tory House." The cliffs here hang over the paths, so that it is almost impossible for rain to reach the spot. The soil is composed of disintegrated limestone, extremely fine, but mingled with minute fragments of stone as well as larger pebbles.

In Aug., 1871, the colony numbered rather more than 600 individuals, but on July 6, 1872, there were scarcely half that number. Perhaps at this last date some were in the chrysalis, as of several specimens thus obtained most of them entered that state in a short time, while those taken in August remained until the following spring.

Food was very scarce in this colony, as it was rare to see more than four or five victims in the lions' dens at one time. On several occasions I noticed a strong and active insect, having ventured over the edge of the pit, run swiftly down and up the other side, leaving the ant-lion wildly snapping its jaws, as the intended victim mounted the steep side of the pitfall.

The ant-lion does not, so far as my observation goes, throw up sand to bring down its prey, but throws it up in every direction in order to keep its jaws free to seize the insect when it reaches the bottom of the den.

In 1871 there was another colony (which I did not visit in 1872) near the "Paint Mine." It consisted of some 300 members. I call it a colony, although, of course, there was no friendly intercourse between the inhabitants of the settlement. On the other hand, in the most crowded portions, the chief employment of the insects was to throw out the dirt which their active neighbors were depositing on their own premises.—E. A. BIRGE, *Williams College*.

CLASSIFICATION OF THE COLEOPTERA.—The true classification of insects makes slow but steady progress. Although easily observed, the beetles have not been so well arranged heretofore as in the recent system of George R. Crotch, who proposed to divide the *Coleoptera* into *Rhynchophora* and *Coleoptera* proper, following out the sketch made by Dr. Le Conte in 1862. *Coleoptera* proper in turn are subdivided into two parallel series, the *Isomera* and

*Heteromera*, characterized principally by the number of the tarsal joints and other characters of less moment; the *Isomera* are again divisible into two parallel series, known generally as *Pentamera* and *Tetramera* though the names are not rigidly exact. The *Pentamera* embrace the bulk of the Coleoptera, and contain all the abnormal tarsal variations; this section was subdivided into five series, the *Adephaga* (second ventral segment visible at the sides); *Clavicornes* (antennæ normally clavate, tarsi variable); *Lamellicornes* (antennæ lamellate, anterior coxal cavities closed); *Serricornes* (antennæ pectinate or serrate, anterior cavities open); Detailed characters were added for the families of *Clavicornes*, which were divided into three main groups characterized by the development of the anterior coxæ, which are prominent and contiguous in *Silphidæ*, etc., globose and separate in *Erotylidæ*, etc., and transverse and separate in *Nitidulidæ*, etc. The families *Rhysodidæ* and *Othniidæ* were removed to the *Adephaga* and *Heteromera* respectively (Proceedings of American Philosophical Society, January 7, 1873).

DO RATTLESNAKES CLIMB TREES?—In the attractive volume entitled “The Animal Creation;” by T. Rymer Jones, New York, 1873, we find the author asserting that “they do not climb trees;” but on the preceding page, p. 291, we find the rattlesnake figured as wrapped, constrictor-like, about a good sized tree. The figure itself is poor, and gives the impression of a serpent ten or twelve feet long; but more noticeable is the fact that the text and illustration do not agree. Which is the more correct? On this subject, we have but to say, that we have seen the *Crotalus horridus* crawl up the body of an oak that had grown out from a hillside, in an oblique position. The snake kept his entire length upon the upper side of the trunk of the tree, and finally coiled himself up at the point of departure of the main branches. Here he was partially concealed and had sufficient “room to spare,” to dart half his length and seize any bird or squirrel that approached. To this extent, we know that rattlesnakes do climb trees, but not in the manner given in the illustration referred to; and we should judge that Mr. Jones’ assertion that they “do not climb” was also incorrect. — CHAS. C. ABBOTT, M. D.

DESTRUCTION OF DRAGON-FLIES BY BIRDS.—Mr. Gould, in a communication to the Entomological Society of London, says, “I be-

lieve that the larger dragon-flies are very liable to the attacks of birds, and have no doubt that the hobby and kestrel occasionally feed upon them; with regard to the small blue-bodied species (*Agrionidæ*) frequenting the sedgy bank of the Thames, I have seen smaller birds, sparrows, etc., capture and eat them before my eyes, after having carefully nipped off the wings, which are not swallowed. This must take place to a considerable extent, as I have observed the tow-path strewn with the rejected wings." This has been observed by Mr. J. L. Hersey of New Hampshire (see the following note):—EDS.

BEES AND KING-BIRDS.—For the last ten years I have carefully noted the habits and movements of the king-birds, and have come to the following conclusion, viz: that they do eat the honey bee, and so does the purple martin; but instead of being destroyed for it, they should be protected and allowed to build their nests near the farm-house, because they drive off the hawks, crows and other plundering birds from the poultry yard. Warm afternoons in July and August, when the drone bees are out, we have seen the martins come down within ten feet of the hive and snap up the drone bees, thus relieving the workers from the necessity of expelling them from the hive and biting off their wings to prevent them from getting back to the hive. The king-bird also, we find, selects the drone, and will come afternoons and take his position on a stake in front of the hive, and when a drone bee comes along will make a rush for him, come back to the stake, give him a pick or two and swallow him. But says an objector, "What do they subsist on before the drone bees fly out?" This point I settled by shooting one in the month of May, and I found in his crop the wings and legs of May-bugs. By watching their movements, I find the dragon-fly is also a favorite food for them.—J. L. HERSEY, *American Bee Journal*.

COLOR OF THE EGGS OF CAPRIMULGINÆ.—In the paper of Dr. Elliott Coues in the *NATURALIST* of June, referring to the eggs of the *Antrostomus Nuttallii*, he speaks of it as a "singular circumstance" that its eggs should be white and adds that it is "a thing before unknown in this genus." In confirmation of his belief in the singularity of the absence of spots in the eggs of Nuttall's whippoorwill Dr. Coues refers to Dr. Sclater's generalization that all *Caprimulginae* lay colored eggs.

We have in this instance another striking exemplification of the danger of hastily laying down rules from isolated facts. The real fact is, so far as we now know, there are as many species belonging to the genus *Antrostomus* that lay white unspotted eggs as there are that have colored ones. The eggs of Nuttall's whippoorwill were first obtained by Mr. Robert Ridgway, who met with them, July 20, 1868, among the East Humboldt Mountains, and the unspotted character of their eggs has for some time been a well known and undisputed fact.

But this is not the first instance of the discovery of an unspotted egg of an *Antrostomus*. In the third volume of the first series of the *Ibis*, page 64, Mr. Salvin mentions taking, April 20, 1860, on the mountains of Santa Barbara, in Central America, a species of *Antrostomus* with two white eggs. Mr. Salvin has since informed me that the parent of these white eggs has been ascertained to be *A. macromystax* of Wagler.

So far as we now know two of this genus, *Carolinensis* and *vociferus*, have eggs with purple marbling on a white ground, and two have purely white eggs. Occasionally the eggs of *vociferus* are almost immaculate. It is quite possible that the other southern forms of *Antrostomus* will be found to have unspotted white eggs and that the markings of the more northern species are the exceptions and not the rule.—T. M. BREWER.

**MORE MONSTERS.**—The account of a double pig in the June number of the *NATURALIST* (page 567) leads me to say that there are now in my possession awaiting examination the following malformations.

1. A double pig, apparently identical with that above referred to; the brains are perfectly preserved.
2. A pig more nearly double, the two individuals being joined only by the thorax.
3. A child with two heads, three legs and a rudimentary third arm; of this the viscera including the two brains are preserved.
4. Four calves with two heads each; from two of these the brains are preserved.
5. A cock and a hen full grown, and possessing four legs each.
6. A young chick with one leg.
7. A foetal pig with seven toes on each manus and six on each pes.

8. The manus of an adult pig with a well formed pollex.
9. A silver fish with partly divided tail.
10. A cat with only one kidney and one cornu of the uterus.
11. A pup, one day old; with no tail, single cloacal opening and one kidney only one-fifth the size of the other.—BURT G. WILDER.

THE DEPTHS OF MID OCEAN.—In her voyage from Teneriffe to St. Thomas the British Exploring Ship “Challenger” sounded and dredged every other day. The soundings showed that a pretty level bottom runs off from the African coast, deepening gradually to a depth of 3,125 fathoms at about one-third of the way across to the West Indies. If the Alps, Mont Blanc and all, were submerged at this spot, there would still be half a mile of water above them. Five hundred miles farther west there is a comparatively shallow part, a little less than two miles in depth. The water then deepens again to three miles, which continues close over to the West Indies. At the deepest spots both on the east and west side of the Atlantic, the dredge brought up a quantity of dark red clay, which contained just sufficient animal life to prove that life exists at all depths. No difficulty was experienced in obtaining these deep-sea dredgings, and it was merely a question of patience, each haul occupying twelve hours. In depths over two miles little has been found, but that little was totally new.—*Nature*.

A CAT'S JUMP. — The following statement, of the distance leaped by a cat, is made by the Messrs. Sanford Brothers, of Ithaca, N. Y., who are not only reliable but accurate observers of the doings of animals. “When our cat was about a year old, he was seen on several days to take position upon a show-case four feet high, and to watch a canary in a cage hanging from the ceiling eight feet from the case; the ceiling was eleven feet from the floor; and the cage an ordinary cylindrical one. One day, as we were observing him thus engaged, he suddenly sprung at the cage and caught his claws upon it; his weight swung the cage up against the ceiling, spilling all the vessels, and terrifying the canary; after swinging to and fro several times, the cat dropped to the floor uninjured; we measured the distance from the top of the case to the cage and found it to be ten feet; so that the cat made an ascent of six feet in eight, or upon an incline of nearly thirty-five degrees.” — B. G. WILDER.

**ÆSTRUS HOMINIS IN TEXAS.**—I have in my possession a larva supposed to be that of *Æstrus hominis* Gmelin; if it is not, it is evidently very closely allied to that. It was taken from an ulcer on the shoulder of an eight-year old boy, of our village, on the 15th inst., by his mother, and given to the family physician, Dr. M. H. Oliver, through whose kindness I was put in possession of it. It is a whitish grub, about  $\frac{1}{2}$  of an inch in length, somewhat wider than thick, the constrictions between the segments are well marked, the cephalic hooks and anal stigmata are visible. It has the appearance of not being fully grown. It is interesting from the fact that, according to the "American Entomologist," no fly belonging to this family has heretofore been known to attack man within the United States.—S. J. STROOP, *Waxahachie, Ellis County, Texas, January 22, 1873*. [Having received Mr. Stroop's specimen, we may say that this is not the larva of *Æstrus hominis*, but of the sheep bot fly (*Æstrus ovis*), or a closely allied species.—Eds.]

**AGRICULTURAL ANTS.**—Mr. Moggridge has observed at Menton, France, two species of ants (*Aphenogaster*) carrying into their nests, during the winter months, the seeds of certain late fruiting plants. He has traced their burrows to a spherical chamber filled with the seed of a grass which he had seen the ants in the act of transporting. "Outside the channels there was generally a heap of the husks of the various seeds, and sometimes one of those heaps would fill a quart measure. These husks had had their farinaceous contents extracted through a hole in one side. He purposely strewed near the nests large quantities of millet and hemp seeds. After the lapse of a fortnight many of these seeds, previously conveyed into the nests, had been brought out again, they having evidently commenced to germinate, and he then found that the radicle was gnawed off from each seed, so as to prevent further growth, and, this being effected, the seeds were carried back again. The cotyledons of germinated seeds were removed from the nest."—*Trans. Entomological Society of London, 1871*.

**METAMORPHOSES OF BUTTERFLIES.**—Dr. Burmeister has forwarded to Paris a fine series of drawings illustrating the earlier stages of the magnificent South American Morphos and Pavonias; many details of their external anatomy are also represented. They will be published in the "Revue et Magazin de Zoologie" and will supply a great deficiency in our knowledge of the metamorphoses of butterflies.